9. (Amended) An electricity meter as in claim 8, further including;

a circuit board, at least partially supported on said chassis, providing additional functionality beyond the functionality provided by said metrology board; and

a fixed connector interconnecting between said metrology board and said circuit board for electrical connections there between and for at least partial mechanical support of said circuit board.

16. (Amended) An electricity meter, having:

an enclosure comprising a cover and a baseplate;

spades extending out from said baseplate for being seated in a meter receiving junction box;

a metrology board electrically connected to said spades and capable of producing a signal indicating electricity consumption; and

a circuit board mounted within said enclosure and electrically connected to said metrology board, said circuit board providing additional functionality beyond the functionality provided by said metrology board selected customized features for said electricity meter beyond said metrology board electricity consumption signal.

30. (Amended) A meter as in claim 25, wherein said circuit board provides additional functionality beyond the functionality provided by said metrology board.

34. (Amended) An electricity meter, having:

an enclosure comprising a cover and a baseplate;

spades extending out from said baseplate for insertion into a meter box receptacle;

a basic metrology board, having first and second opposing surfaces, wherein said metrology board is electrically connected to said spades and capable of metering electricity consumption;

a circuit board, having third and fourth opposing surfaces, wherein said circuit board provides additional functionality beyond the functionality provided by said metrology board, wherein said circuit board is mounted within said enclosure and electrically connected to said

metrology board; and

an antenna, associated directly with a selected of the first, second, third and fourth opposing surfaces, for transmitting through said cover a radio signal corresponding with metrology data from at least one of said boards.

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42. (Amended) A modular electricity meter with multiple components selected from alternatives and assembled with snap fit and interlocking arrangements, comprising:

an encloseable casing having a common baseplate with plural mounting posts and an inner cover removably interconnected thereto;

a plurality of electrical connection mounting spades extending from said casing through said baseplate and outwardly therefrom, for mechanical seating thereof in an electricity meter junction box receptacle;

a basic metrology board, defining mounting holes therein for mating with said baseplate mounting posts for support of said basic metrology board within said casing in a predetermined relationship with said baseplate;

a plurality of resilient connectors received within said casing and electrically connecting between said basic metrology board and said spades so that said basic metrology board is connected for producing a signal indicating electricity consumption at the junction box receptacle with which said electricity meter is associated;

a circuit board received within said casing and electrically connected with said basic metrology board, said circuit board providing additional functionality beyond the functionality provided by said metrology board;

a common power supply received within said casing for providing power to both said basic metrology board and said circuit board;

a fixed connector extending between said basic metrology board and said circuit board, for at least partially mechanically supporting said circuit board, said fixed connector including multiple respective conductors for carrying between said basic metrology board and said circuit board both data from said respective boards and power from said common power supply;

a support chassis, defining mounting holes therein for mating with said baseplate mounting posts for support of said chassis within said casing in a predetermined relationship

with said baseplate;

a meter display mounted in snap fit arrangement supported in fixed relation to said support chassis;

a coil electrically associated with said spades and physically supported in predetermined relationship to said baseplate; and

a Hall Effect sensor associated with said basic metrology board and situated in a predetermined position relatively adjacent said coil for electrical sensing interaction therewith, said predetermined position being formed in part by said predetermined relationship between said baseplate and said basic metrology board;

whereby said modular electricity meter establishes predetermined spatial relationships between selected alternative components using snap fit and interlocking arrangements established from said common baseplate.

65. (Amended) Methodology for providing an electricity meter, comprising:

providing an enclosure with a baseplate and a cover without any metal elements;

extending spades from said baseplate for electrical contact of said meter with main power by insertion of said spades in an electricity meter junction box receptacle;

providing a metrology board having first and second opposing surfaces, wherein said metrology board is electrically connected with said spades and capable of metering electricity consumption; and

providing an antenna associated directly with a selected of the first and second opposing surfaces of said metrology board for transmitting directly therefrom through said cover a radio signal corresponding with electricity consumption as metered by said metrology board.

66. (Amended) A methodology as in claim 65, including further providing:

a circuit board providing additional functionality beyond the functionality provided by said metrology board, mounted within said enclosure;

a common power supply within said enclosure for both said metrology board and said circuit board; and

a fixed connector at least partially physically supporting said circuit board and electrically

connecting said circuit board with said metrology board using multiple conductors for carrying both data and power signals between said boards.

69. (Amended) Methodology for providing a modular electricity meter with multiple components selected from alternatives and assembled with snap fit and interlocking arrangements, comprising:

providing an encloseable casing having a common baseplate with plural mounting posts and an inner cover removably interconnected thereto;

extending a plurality of electrical connection mounting spades from said casing through said baseplate and outwardly therefrom, for mechanical seating thereof in an electricity meter junction box receptacle;

providing a basic metrology board, defining mounting holes therein for mating with said baseplate mounting posts for support of said basic metrology board within said casing in a predetermined relationship with said baseplate;

receiving a plurality of resilient connectors situated within said casing and electrically connecting between said basic metrology board and said spades so that said basic metrology board is connected for producing a signal indicating electricity consumption at the junction box receptacle with which said electricity meter is associated;

situating a circuit board within said casing and electrically connected with said basic metrology board, said circuit board providing additional functionality beyond the functionality provided by said metrology board;

including a common power supply received within said casing for providing power to both said basic metrology board and said circuit board;

extending a fixed connector between said basic metrology board and said circuit board, for at least partially mechanically supporting said circuit board, said fixed connector including multiple respective conductors for carrying between said basic metrology board and said circuit board both data from said respective boards and power from said common power supply;

including a support chassis, defining mounting holes therein for mating with said baseplate mounting posts for support of said chassis within said casing in a predetermined relationship with said baseplate;

mounting a meter display in snap fit arrangement supported in fixed relation to said support chassis;

electrically associating a coil with said spades and physically supported in predetermined relationship to said baseplate; and

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associating a Hall Effect sensor with said basic metrology board and situated in a predetermined position relatively adjacent said coil for electrical sensing interaction therewith, said predetermined position being formed in part by said predetermined relationship between said baseplate and said basic metrology board;

whereby such methodology for providing such a modular electricity meter establishes predetermined spatial relationships between selected alternative components using snap fit and interlocking arrangements established from said common baseplate.

REVIEW

The original application sets forth claims 1-79, of which claims 1, 16, 25, 34, 38, 42, 53, 65 and 69 are independent claims. Claims 9, 16-24, 34-37, 42-52, 66 and 69-79 stand collectively rejected under 35 U.S.C. §112, 2nd paragraph, as being indefinite with respect to certain specified terms. Claims 1-79 stand rejected under 35 U.S.C. 112, first paragraph, as pertaining to subject matter that is not enabled by the specification. Otherwise, in a detailed seven page Office Action, eight separately numbered sections (and sub-discussions thereunder) variously addresses alleged prior art grounds of rejection (referenced below). For the convenience of the Examiner, they are correspondingly considered and respectfully traversed as follows.

Claims 16 and 17 stand rejected under 35 U.S.C. §102(b) as being anticipated by Selph et al. (U.S. Patent No. 4,804,957). Claims 65 stands rejected under 35 U.S.C. §102(b) as being anticipated by Loy et al. (U.S. Patent No. 5,966,010). Claims 18-22, 25 and 27-31 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Selph et al. (4,804,957) in view of Miller (4,368,424) and Johnson (4,298,839). Claims 34, 38-41 and 65-67 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Selph et al. (4,804,957) in view of Loy et al. (5,966,010) and Johnson (4,298,839) and Shincovich et al. (5,590,179).

The amendments presently made respectfully include no new matter, and are entered to facilitate early issuance of the patentable subject matter, and are not intended to substantively alter the scope of the claimed subject matter.

1: 35 U.S.C. §112, 2nd PARAGRAPH REJECTIONS

Claims 9, 16-24, 34-37, 42-52, 66 and 69-79 stand collectively rejected under 35 U.S.C. §112, 2nd paragraph, as being indefinite with respect to certain specified terms for failing to particularly point out and distinctly claim the subject matter of the present invention. It is with the following additional comments that Applicants respectfully traverse such rejections.

Controlling Case Law

It is well established that "[a] claim is sufficiently definite if one skilled in the art would understand the bounds of the claim when read in light of the specification." *North American Vaccine, Inc. v. American Cyanamid Co.*, 7 F.3d 1571, 1579 (Fed. Cir. 1993).

Facts and Argument

The Examiner has rejected claim 9 as being indefinite. The Examiner contends that the term "a higher level analysis" is unclear. Please note that the term "a higher level analysis" is not used in claim 9. The term "relatively higher level analysis," however, is used in claim 9. It is respectfully submitted that such term is sufficiently definite such that one skilled in the art would understand the bounds of the claim when read in light of the specification. To facilitate its early approval, Claim 9 has been amended to remove the "relatively higher level analysis" term from the claim.

The Examiner has rejected claims 16, 42 and 69 as being indefinite. The Examiner contends the term "selected customized features" is unclear. It is respectfully submitted that such term is sufficiently definite such that one skilled in the art would understand the bounds of the

claim when read in light of the specification. In any event, to facilitate their early approval, claims 16, 42 and 69 have been amended to remove the "selected customized features" term from the claims.

The Examiner has rejected claim 34 as being indefinite. The examiner contends that the term "predetermined additional metrology features" is unclear. It is respectfully submitted that such term is sufficiently definite such that one skilled in the art would understand the bounds of the claim when read in light of the specification. However, to facilitate its early approval, claim 34 has been amended to remove the "predetermined additional metrology features" term from the claim.

The Examiner has rejected claim 66 as being indefinite. The examiner contends that the term "additional metrology features" is unclear. It is respectfully submitted that such term is sufficiently definite such that one skilled in the art would understand the bounds of the claim when read in light of the specification. Nevertheless, to facilitate its early approval, claim 66 has been amended to remove the "additional metrology features" term from the claim.

Specific future customer needs are by definition unknown subject matter. The problem becomes then, how to design an electricity meter that can be easily modified to meet future customers needs. It is respectfully submitted that a careful review of the Applicants' application makes it clear that the subject matter of claim 9 relates to a modular "electricity meter" design that can accommodate both a "metrology board" (for performing, for example, basic metrology functions such as electrical energy consumption) and a second optional "circuit board" for adding additional functionality to the meter. Such claim 9 optional "circuit board" provides a mechanism for upgrading the functionally of a meter to provide services customers may desire in the future. For a review of such possible future services, the Examiner's attention is directed to

the following application citations: (1) page 11, lines 5-14, (2) page 26 line 29 through page 27, line 5, (3) page 28, lines 11-25, (4) page 41, Line 1 – 9, and (5) page 46, line 14 through page 47 line 3. In addition, the Examiner's attention is directed to the patents incorporated by reference (over forty of them) into the Applicants' application. Such patents provide numerous examples and descriptions of technology and methodology for adding functionality to an electricity meter.

Based on the above comments and claim amendments, it is respectfully submitted that each of the terms and phrases found in claims 9, 16-24, 34-37, 42-52, 66 and 69-79 would be fully understood by one of ordinary skill in the art upon a review of the originally submitted specification and drawings. It is respectfully submitted, therefore, that the claims 9, 16-24, 34-37, 42-52, 66 and 69-79 fully comply with all pertinent requirements of 35 U.S.C. §112, 2nd paragraph, wherefore such rejections are traversed. Withdrawal of such grounds of rejection and allowance of the claims are earnestly solicited.

2: 35 U.S.C. §112, 1st PARAGRAPH REJECTIONS

Claims 1-79 stand rejected under 35 U.S.C. 112, first paragraph, as pertaining to subject matter that is not enabled by the specification in such a way as to enable one skilled in the art to which it performs, or with which it is most nearly connected, to make and/or use the invention.

Controlling Case Law

Any analysis of whether a particular claim is supported by the disclosure in an application requires a determination of whether that disclosure, when filed, contained sufficient information regarding the subject matter of the claims as to enable one skilled in the pertinent art to make and use the claimed invention.[1] The Supreme Court[2] established the "undue experimentation"

[1] MPEP, §2164.01 at 2100-174 (8th ed. August 2001).
[2] *Mineral Separation v.Hyde,* 242 U.S. 261, 270 (1916).

standard for determining whether the specification meets the enablement requirement. Consequently, "[t]o be enabling, the specification of the patent must teach those skilled in the art how to make and use the full scope of the claimed invention without 'undue experimentation.'[3]"

Facts and Argument

(a) Claims 1-79 Enablement

The examiner contends claims 1-79 contain subject matter that is not described in the specification in such a way to enabled one skilled in the art to which it pertains to make and use the invention because the specification does not adequately support the terms "higher level function circuit board" and "a higher level function circuit board."

First, claims 1-8, 10-15, 38, 40-41, 53-59, 65, 67-68 do not contain a "circuit board" limitation and thus do not rely on an enabling description of the above described allegedly non-enabled terms. Consequently, a non-enabling rejection based on enablement of a "higher level function circuit board" and/or "a higher level function circuit board" is not applicable to such claims.

Second, while claims 9, 16-37, 39, 42-52, 60-64, 66, 69-79 may contain a "circuit board" limitation for providing additional functionality beyond the functionality provided by the meter's metrology board, it is respectfully submitted that such "circuit board" is adequately defined in the application. The Examiner's attention is directed to the following application citations: (1) page 11, lines 5-14, (2) page 26 line 29 through page 27, line 5, (3) page 28, lines 11-25, (4) page 41, Line 1 – 9, and (5) page 46, line 14 through page 47 line 3. In addition, the Examiner's attention is directed to the patents incorporated by reference (over forty of them) into the Applicants'

[3] *Genentech Inc. v. Novo Nordisk A/S*, 108 F.3d 1361, 1365 (Fed. Cir. 1997) (quoting In re Wright, 999 F.2d

application. Such patents provide numerous examples and descriptions of technology and methodology for adding functionality to an electricity meter.

(b) Claim 9 Enablement

The examiner contends that claim 9 is not enabled because the specification does not adequately define the term "a higher level analysis." As noted above, claim 9 does not contain the term "a higher level analysis" but does contain the term "relatively higher level analysis." Claim 9 has been amended to remove the "relatively higher level analysis" limitation from the claim.

(c) Claims 16, 42 and 69 Enablement

The examiner contends that claims 16, 42, and 69 are not enabled because the specification does not adequately support the term "selected customized features." Based on the above comments, it is respectfully submitted that such term is sufficiently enabled. However, Claims 16, 42 and 69 have been amended to remove the term "selected customized features" from the claim.

(d) Claim 66 Enablement

The examiner contends that claim 66 is not enabled because the specification does not adequately support the term "additional metrology features." Based on the above comments, it is respectfully submitted that such term is sufficiently enabled. Nevertheless, claim 66 has been amended to remove the term "additional metrology features" from the claim.

1557, 1561 (Fed. Cir. 1993)).

Enablement Argument Summary

Based on the above comments and claim amendments, it is respectfully submitted that claims 1-79 fully comply with all pertinent requirements of 35 U.S.C. §112, 1st paragraph, wherefore such rejections are traversed. Withdrawal of such grounds of rejection and allowance of the claims are earnestly solicited.

3: 35 U.S.C. §102(b) REJECTION

With respect to the 35 U.S.C. §102(b) rejection of claims 16, 17 and 65, Applicants respectfully traverse such grounds of rejection with the following remarks.

Controlling Case Law

Before setting forth a discussion of the prior art applied in the Office Action, it is respectfully submitted that it is well established that "[a] claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference."[4] Likewise, controlling case law has frequently addressed rejections under 35 U.S.C. §102. "For a prior art reference to anticipate in terms of 35 U.S.C. Section 102, **every element** of the claimed invention **must** be **identically** shown in a single reference." Diversitech Corp. v. Century Steps, Inc., 850 F.2d 675, 677, 7 U.S.P.Q.2d 1315, 1317 (Fed. Cir. 1988; emphasis added). The disclosed elements must be arranged as in the claim under review. *See* Lindemann Machinefabrik v. American Hoist & Derrick Co., 730 F.2d 1452, 1458, 221 U.S.P.Q. 481, 485 (Fed. Cir. 1984). If **any** claim, element, or step is absent from the reference that is being relied upon, there is **no** anticipation. Kloster Speedsteel AB v. Crucible,

Inc., 793 F.2d 1565, 230 U.S.P.Q. 81 (Fed. Cir. 1986; emphasis added).

Facts and Argument

Claims 16 and 17 -- Anticipation

As noted above, the Examiner has rejected claims 16 and 17 under 35 U.S.C. §102(b) as being anticipated by Selph et al. (4,804,957). Independent claim 16 and dependent claim 17 encompass certain common aspects that distinguish them from the cited reference. In such regard, it is respectfully submitted that Selph et al. merely serves to demonstrate the patentability of Applicants' claimed subject matter. Specifically, Selph et al. fails to adequately disclose every element of the claimed subject matter and as such cannot serve at law as an anticipating reference under 35 U.S.C. §102.

As indicated on page 1 of the Applicants' specification, metrology is "the science of measurement". In claims 16 and 17, the phrase "metrology board" refers to reference number 140, which is clearly shown in Figures 4, 7, 8, 9, and 11. In addition, the phrase "circuit board" refers to reference number 162, which is clearly shown in Figure 4. The following is a general description of the Applicants' "metrology board" and "circuit board":

> Such embodiment may further include a separate metrology board and a higher level function board. Such metrology board may be a standard or basic device for kiloWatt hour data while the higher level function board may permit custom design or "personality" inclusion of features for an electricity meter per a given customer's design criteria. For example, a standard device for kiloWatt hour sensing may include a transducer with three inputs (current, voltage, and phase) and a simple pulse train output. [Original Specification, Page 10, L22-30]

The Applicants' "metrology board" is described in more detail on pages 25-26. The Applicants'

[4] Manual of Patent Examining Procedure, §2131 p2100-69 (8th ed. August 2001).

"circuit board" is described in more detail on page 26, lines 27-34. In particular, the Applicants' "circuit board" is "a second or optional higher level function circuit board . . . [that provides] a **variety of alternative functions** . . . for providing "personality" or customization of the entire device 12 to meet the needs of a particular customer."

Based on such specification disclosures, it should be clear that the claim 16 "metrology board" may perform basic metrology functions as well as higher-level metrology functions or other related functions (such as demand, TOU, Load Profile, etc.). The level of functionality beyond basic metrology functions performed by the claim 16 "metrology board" is not important. All that claim 16 requires is for the claim 16 "metrology board" to perform at least basic metrology functions and for the claim 16 "circuit board" to provide additional functionality (such as wireless AMR services) beyond the functionality of the claim 16 "metrology board".

While Selph et al. does teach a utility meter design that includes both a Selph et al. circuit board (68), and a Selph et al. processor/display board (70), the Examiner has failed to show that such Selph et al. teachings disclose or make obvious the Applicants' claimed technology. In particular, with respect to independent claim 16 and dependent claim 17, it is respectfully submitted that Selph et al. fails to disclose a circuit board as specified in such claims. Restated, Selph et al. appears to simply disclose a meter having a two-board "metrology board" design and having no "circuit board" (as disclosed in the Applicants' specification and as claimed in claims 16 and 17). Indeed, a careful reading of Selph et al. at C6, L63-68, will indicate that board (68) is a current sensor board and board (70) is the processor/display board. Consequently, it appears that if either board 68 or 70 is removed from the Selph et al. device, such device would no longer perform basic metering functions. As stated above, the Applicants' "circuit board" may not required to perform basic metering functions. Consequently, it is respectfully submitted that

Selph fails to disclose "**every element**" of the claimed subject matter and thus cannot at law serve as an anticipatory reference to any of claims 16 and 17.

It is, therefore, believed that such claims are presently in condition for allowance and acknowledgement of such is earnestly solicited.

Claim 65 -- Anticipation

As noted above, the Examiner has rejected claim 65 under 35 U.S.C. §102(b) as being anticipated by Loy et al. (5,966,010). Independent claim 65 encompasses certain aspects that distinguish it from the cited reference. In such regard, it is respectfully submitted that the reference, Loy et al., merely serves to demonstrate the patentability of Applicants' claimed subject matter. Specifically, Loy et al. fails to adequately disclose every element of the claimed subject matter and as such cannot serve at law as an anticipating reference to the present subject matter under 35 U.S.C. §102.

As to claim 65, the Applicants disclose an antenna that is incorporated within a circuit board (i.e. associated directly with such circuit board). Loy et al. teach attaching the antenna to the edge of the metrology board. The Loy et al. antenna, (being attached to the side of the metrology board), could be broken off or otherwise damaged during assembly. The Applicants' technology provides an improved antenna, where such antenna is incorporated within a circuit board as described below:

> Another present object is improved data transmission features, for example, by avoiding the use of any metal in faceplates or cover elements, to permit meter data to be radiated **directly from a printed circuit board without requiring a separate antenna.** [page 8, lines 29-34]

Claim 65 has been amended to better describe such benefits. Based on the claim 65 amendments and above comments, it is respectfully submitted that Loy et al. fails to disclose "**every element**" of the claimed subject matter and thus cannot at law serve as an anticipatory reference to claim 65. It is, therefore, believed that such claims are presently in condition for allowance and acknowledgement of such is earnestly solicited.

4: 35 U.S.C. §103(a) Rejections

With respect to the 35 U.S.C. §103(a) rejection of claims 18-22, 25, 27-31, and the 35 U.S.C. §103(a) rejection of claims 34-36, 38-41and 65-67, Applicants respectfully traverse such grounds of rejection with the following remarks.

Controlling 35 U.S.C. §103 - Case Law

Obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching or suggestion supporting the combination. Under section 103, teachings of references can be combined only if there is some suggestion or incentive to do so. (emphasis original) *ACS Hospital Systems, Inc. v. Montefiore Hospital*, 221 U.S.P.Q. 929, 933 (Fed. Cir. 1984). The task of the Patent Office is essentially a burden of proof not just to show prior patents with selected elements similar to respective parts of a claimed combination, but to show teachings to support obviously combining the elements in the manner claimed. The court in *Panduit Corp. v. Dennison Manufacturing* noted the following:

> Virtually all inventions are necessarily combinations of old elements. The notion, therefore, that combination claims can be declared invalid merely upon finding similar elements in separate prior patents would necessarily destroy virtually all patents and cannot be the law under the statute, § 103. *Panduit Corp. v. Dennison Manufacturing Co.*, 1 U.S.P.Q. 2d 1593, 1603 (Fed. Cir. 1987; footnotes omitted).

In *In re Deminski*, 230 U.S.P.Q. 313 (Fed. Cir. 1986), the court reversed a Patent Office Board of Appeals decision rejecting claims for obviousness, saying: "There [was] nothing in the prior art references, singly or in combination, 'to suggest the desirability, and thus the obviousness' of the [claimed subject matter]." *Id.* at 315; emphasis original. The court noted that the relied-on reference did not address the technical problem addressed by the claimed invention (and in fact taught away from the Applicants' invention), and stated the well-established principle that "[h]indsight analysis is clearly improper . . . ." *Id.* at 316.

In Bausch & Lomb v. Barnes-Hind/Hydrocurve, 230 U.S.P.Q. 416 (Fed. Cir. 1986), the court vacated a district court holding of invalidity for obviousness. In doing so, the district court was criticized for viewing teachings from the prior art in isolation, instead of considering the prior art references in their entirety; for entering the tempting but forbidden zone of hindsight analysis; for failing to view the claimed invention as a whole; and for disregarding express claim limitations. Id. at 419, 420.

> It is impermissible within the framework of section 103 to pick and choose from any one reference only so much of it as will support a given position to the exclusion of other parts necessary to the full appreciation of what such reference fairly suggests to one skilled in the art. *Bausch & Lomb*, *supra*, at 419 (emphasis added).

In *In re Warner*, the court stated:

> A rejection based on section 103 clearly must rest on a factual basis, and these facts must be interpreted without hindsight reconstruction of the invention from the prior art . . . . It [the Patent Office] may not, because it may doubt that the invention is patentable, resort to speculation, unfounded assumptions or hindsight reconstruction to supply deficiencies in its factual basis . . . . [W]e may not resolve doubts in favor of the Patent Office determination when there are deficiencies in the record as to the necessary factual bases supporting its legal conclusion of obviousness. *In re Warner*, 379 F.2d 1011, , 154 U.S.P.Q. 173, 177, 178 (C.C.P.A. 1967; emphasis original).

The court in In re Zurko[5] held that patentability (or inpatentability) determinations can not be based on what appears to be true, on unsupported conclusions of "basic knowledge" or "common sense" to one of ordinary skill in the art. Patentability determinations must be founded in concrete evidence of record (i.e. facts).

35 U.S.C. §103(a) - MPEP

The Examiner bears the initial burden of factually supporting any prima facie case of obviousness. If the Examiner does not produce a prima facie case, the Applicants are under no obligation to submit evidence of nonobviousness. MPEP §2142 p2100-121 (8th ed. 2001).

To establish a prima facie case of obviousness, three basic criteria must be met: (1) there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings; (2) there must be a reasonable expectation of success; (3) the prior art reference (or references when combined) must teach or suggest all the claimed limitations.

With particular reference to the Office Action dated 10/31/2002, Applicants note several instances in which the Examiner alleges that certain features of the present technology are "old and well known" in the art. Applicants respectfully rebut all such statements and hereby traverse such alleged support for rejection in accordance with MPEP § 2144.03. Applicants further request that the Examiner provide documentary evidence in support of all statements regarding "well known" prior art, if the Examiner wishes to proceed with a formal position regarding such statements. The MPEP further notes:

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[5] In re Zurko, 258 F.3d 1379, 1386, 59 U.S.P.Q.2d 1693, 1697 (Fed. Cir. 2001); (stating that inpatentability determinations limitations of claimed of inventions cannot be met with general conclusions about "basic knowledge" or "common sense" to one of ordinary skill in the art, but must be found in concrete evidence of record)

In light of the Supreme Court decision in *Dickinson v. Zurko*, 527 U.S. 150, 50 USPQ2d 1930 (1999), holding that the Federal Circuit must apply one of the standards set forth in the Administrative Procedure Act (" APA"), the Federal Circuit adopted the " substantial evidence" standard for reviewing factfinding by the Board of Patent Appeals and Interferences. I*n re Gartside*, 203 F.3d 1305, 53 USPQ2d 1769 (Fed. Cir. 2000). The " substantial evidence" standard asks whether the agency action, findings, and conclusions were supported by substantial evidence, or, in other words, whether a reasonable factfinder could have arrived at the agency's decision. The Supreme Court has described " substantial evidence" as " more than a mere scintilla. It means such relevant evidence as a reasonable mind might accept as adequate to support a conclusion. . . . Mere uncorroborated hearsay or rumor does not constitute substantial evidence." *Consolidated Edison Co. v. NLRB,* 305 U.S. 197, 229-30 (1938)(citations omitted).[6]

35 U.S.C. §103(a) Rejections

The following analysis of the present rejections is respectfully offered with guidance from the foregoing controlling case law decisions and MPEP procedures.

With respect to the 35 U.S.C. §103(a) rejections, Applicants respectfully traverse such grounds of rejection. By relying on rejection grounds under 35 U.S.C. §103(a) for alleged obviousness, and by various statements throughout the detailed Office Action, the PTO already acknowledges certain important deficiencies of the base references which renders such references inadequate for serving by themselves as a rejection basis for any of the rejected claims. In addition, it is respectfully submitted that the Examiner has failed to show that any of the secondary references cited serve to overcome the faults of the base reference mentioned, and thus, all claims are in condition for allowance.

In each instance where the Examiner makes unsupported factual assertions (numerous instances set forth below by example), Applicants specifically request citation of and reference to a piece of prior art to support the corresponding Examiner allegations of obviousness.

[6] Manual of Patent Examining Procedure, §1200 1200-46 (8th ed. August 2001)

(a) 35 U.S.C. §103(a) Rejections - Claims 18-22, 25 and 27-31

Claims 18-22, 25 and 27-31 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Selph et al. (4,804,957) in view of Miller (4,368,424) and Johnson (4,298,839).

Claims 18-22 – "Snap Fit"

The Examiner rejected claims 18-22 using only the Selph et al. reference, and several factually unsupported statements. The Examiners concedes that Selph et al. does not use "snap fit" technology. However, the Examiner contends that "it would have been obvious for one of ordinary skill in the art to provide a snap fit mount for the circuit board . . . ." It is respectfully submitted that such a factually unsupported statement fails to establish a *prima facie* case of obviousness.[7] Nor has the Examiner presented any reference providing a motivation to combine such hypothetically well known "snap fit" technology with the Selph et al. technology to achieve the Applicants' claim 18 subject matter.

Even assuming a *prima facie* case of obviousness has been established, the Examiner has failed to show where Selph et al. teaches or makes obvious the "circuit board" of claims 18-22 For at least this reason Selph et al. is not a proper reference on which to base a 35 U.S.C. §103(a) rejection.

In addition, claims 18-22 include a "fixed connector" limitation. The Examiner has not shown where the prior art reference Selph et al. teaches or makes obvious such "fixed connector."

[7] In re Zurko, 258 F.3d 1379, 1386, 59 U.S.P.Q.2d 1693, 1697 (Fed. Cir. 2001).

Claims 20, 25 and 27 – "resilient connectors"

The Examiner contends that claims 20, 25 and 27 are unpatentable over Selph et al. in view of Miller. The Examiner's rejection states that it "appears" the device of Miller has resilient connectors for connecting the spades with the metrology board.

Applicants' claims 25 and 27 contain a "circuit board" limitation, a "fixed connector" limitation and a "mating post and holes" limitation. For at least these reasons, it is respectfully submitted that the Examiner's §103(a) rejection of claims 20, 25 and 27 is improper and based on the relevant arguments previously described, it is respectfully submitted that claims 20, 25, and 27 are in condition for allowance.

Claims 21, 29 and 30 – "Hall effect Sensor"

As to claims 21 and 29-30, the Examiner states: "the device of Selph et al. has a hall (sic) effect sensor (84) mounted on a metrology board (68)." Here the Examiner makes no proper rejection grounds to which a response can be given.

In any event, claims 21, 29 and 30 have a "circuit board" limitation, a "fixed connector" limitation and a "mating post and holes" limitation. For at least these reasons, based on the relevant arguments previously presented, it is respectfully submitted that claims 21, 29, and 30 are in condition for allowance.

Claim 22 – Chassis

As to claims 22, the Examiner states: "it appears that the meter of Selph et al. would include a chassis since this is a conventional feature on the energy meter." Here the Examiner makes no rejection to which a response can be given. In addition, the Examiner's rejection states

that it "appears" the meter of Selph et al. would include a chassis since this is a conventional feature on the energy meter. The statement that something "appears" to be in a reference does not meet the previously described evidence standard for establishing a *prima facie* case of obviousness. It is respectfully submitted, therefore, that the Examiner's §103(a) rejection of claim 22 is improper.

In addition, claim 22 has a "circuit board" limitation, a "fixed connector" limitation and a "mating post and holes" limitation. For at least these reasons, based on the relevant arguments previously presented, it is respectfully submitted that claim 22 is in condition for allowance

Claim 28 – "Light Pipe"

As to claim 28, claim 28 has a "circuit board" limitation, a "fixed connector" limitation and a "mating post and holes" limitation. For at least these reasons, based on the relevant arguments previously presented, it is respectfully submitted that claim 28 is in condition for allowance.

Claim 31 – "Display"

As to claim 31, the Examiner rejected claim 31 stating: "it would have been old and well known to have a chassis and meter display in the device of Selph et al. The factually unsupported statement that something "would have been old and well known" does not meet the previously described evidence standard for establishing a *prima facie* case of obviousness. Thus, it is respectfully submitted that the Examiner's §103(a) rejection of claim 31 is improper.

In addition, claim 31 has a "circuit board" limitation, a "fixed connector" limitation and a "mating post and holes" limitation. For at least these reasons, based on the relevant arguments previously presented, it is respectfully submitted that claim 31 is in condition for allowance.

(b) 35 U.S.C. §103(a) Rejections - Claims 34, 38-41 and 65-67

Claims 34, 38-41 and 65-67 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Selph et al. (4,804,957) in view of Loy et al. (5,966,010) and Johnson (4,298,839) and Shincovich et al. (5,590,179).

Claims 34, 38, 39, 66, 67 contain a "circuit board" limitation. For at least this reason, based on the "circuit board" argument previously presented, it is respectfully submitted that such claims are in condition for allowance. Claims 38, 39, and 67 contain a "fixed connector" limitation. For at least this reason it has been respectfully submitted that such claims are in condition for allowance.

As to Claim 65, such claim has been amended to claim an antenna that associated directly with one of the opposing surfaces of the metrology board. Loy et al. teach attaching the antenna to the edge of the metrology board. The Loy et al. antenna, (being attached to the side of the metrology board), could be broken off or otherwise damaged during assembly. The Applicants' technology provides an improved antenna, where such antenna is incorporated on the surface of (or within) a circuit board as described below:

> Another present object is improved data transmission features, for example, by avoiding the use of any metal in faceplates or cover elements, to permit meter data to be radiated **directly from a printed circuit board** without requiring a separate antenna. [page 8, lines 29-34]

As to claim 35, such claim stands rejected based on the following Examiner's factually unsupported statement: "it is well known that there is a power supply for providing power to those boards." The factually unsupported statement that something "is well known" does not

meet the evidence standard set by the court in In re Zurko[8] for establishing a *prima facie* case of obviousness. Thus, it is respectfully submitted that the Examiner's §103(a) rejection of claim 35 is improper.

In addition, claim 35 contains a "circuit board" limitation. For at least this reason, based on the "circuit board" argument previously presented, it has been respectfully submitted that claim 35 is in condition for allowance.

As to claim 36 and 41, such claims stand rejected based on the following Examiner's factually unsupported statement: "it would have been well known to connect the metrology board to the circuit board through a fixed connector." The factually unsupported statement that something "would have been well known" does not appear to meet the evidence standard set by the court in In re Zurko[9] for establishing a *prima facie* case of obviousness. Thus, it is respectfully submitted that the Examiner's §103(a) rejection of claims 36 and 41 is improper.

In addition, claims 36, 37 and 52 contain a "circuit board" limitation. For at least this reason, based on the circuit board argument previously presented, it has been respectfully submitted that claims 36, 37 and 52 are in condition for allowance.

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[8] In re Zurko, 258 F.3d 1379, 1386, 59 U.S.P.Q.2d 1693, 1697 (Fed. Cir. 2001).
[9] *Id.*